

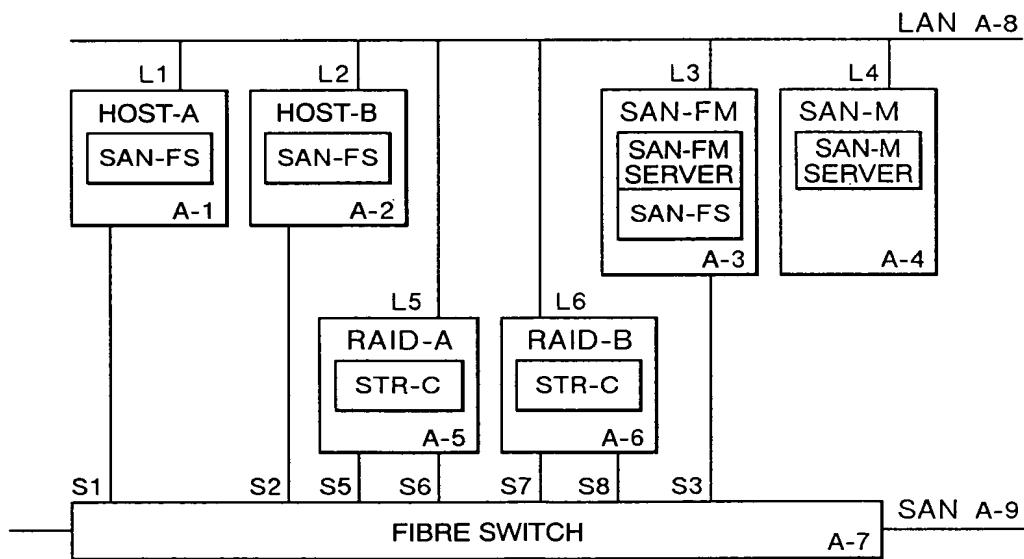
FIG. 1**FILE STORAGE MANAGEMENT SYSTEM**

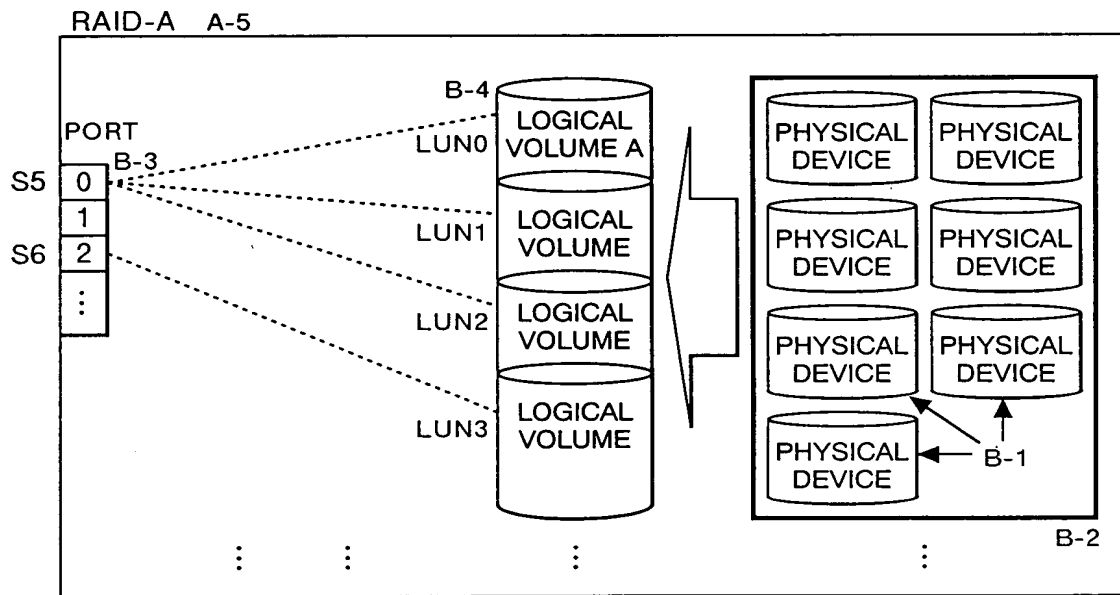
FIG. 2**RAID CONSTRUCTION**

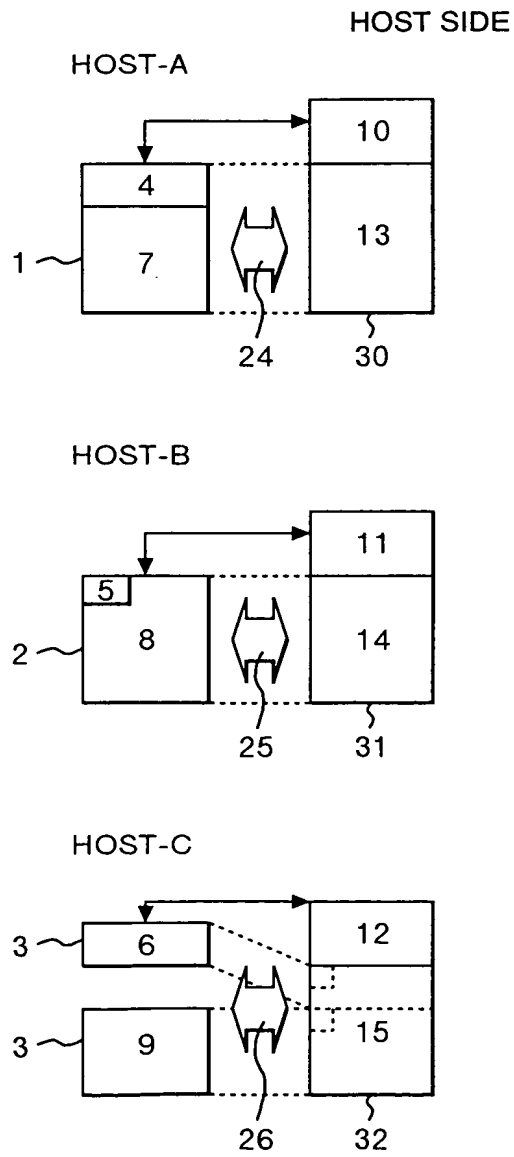
FIG. 3

FIG. 4

STORAGE MANAGEMENT IN LUN

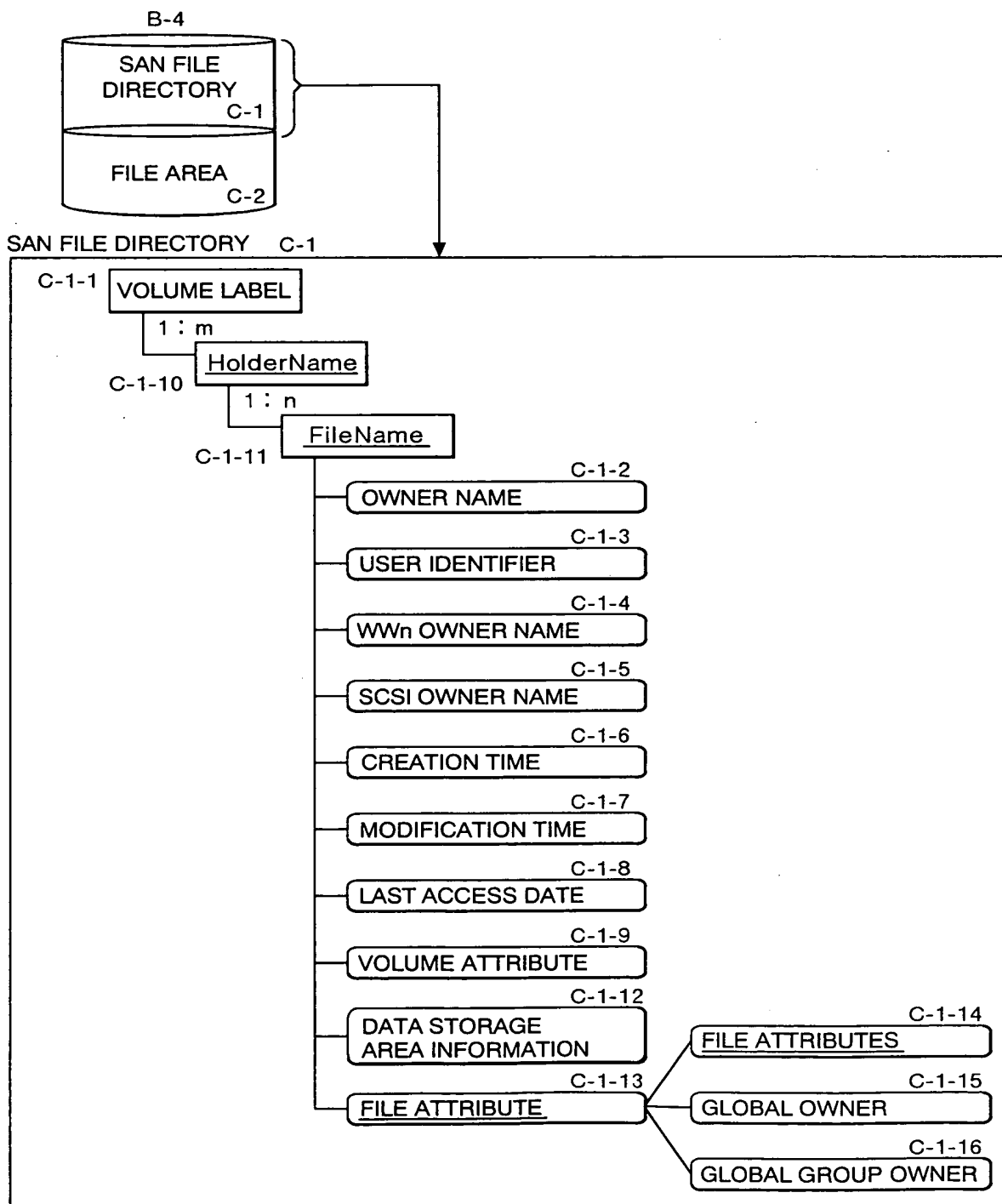


FIG. 5

STORAGE MANAGEMENT IN LUN

D-1

SAN FILE DIRECTORY (SAN-FD)

| FileName | DATA STORAGE AREA | FILE | VOLUME | OWNER | USER | WWn | SCSI |
|-----------|-------------------|--------------|-----------|----------|------------|-----------|--------|
| CREATION | INFORMATION | ATTRIBUTE | LABEL | NAME | IDENTIFIER | OWNER | OWNER |
| TIME | MODIFICATION | LAST | VOLUME | | HolderName | | |
| TIME | TIME | ACCESS DATE | ATTRIBUTE | | | | |
| sssssssss | hhhhhh | RRRR | VOL1 | TTTT | QQQQ | 010100000 | 11T2L3 |
| xxxxxxh | xxxxxxxxk | xxxxxxxxxxxi | FFFFFFFF | Holder-A | | | |
| ssssssssa | hhhhha | RRRA | VOL1 | TTTA | QQQA | 010100001 | 11T2L4 |
| xxxxxxq | xxxxxxxxxe | xxxxxxxxxxxr | FFFFFFFFQ | Holder-B | | | |
| . | | | | | | | |
| . | | | | | | | |

FIG. 6

MANAGEMENT DB

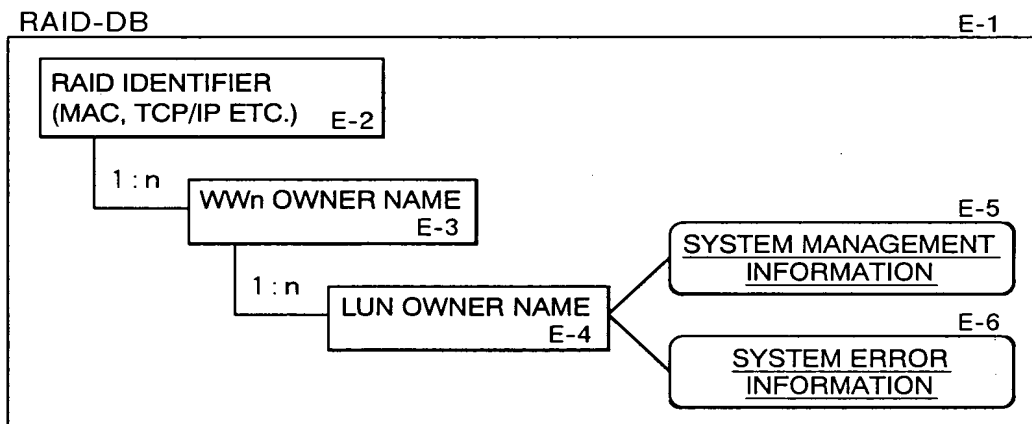


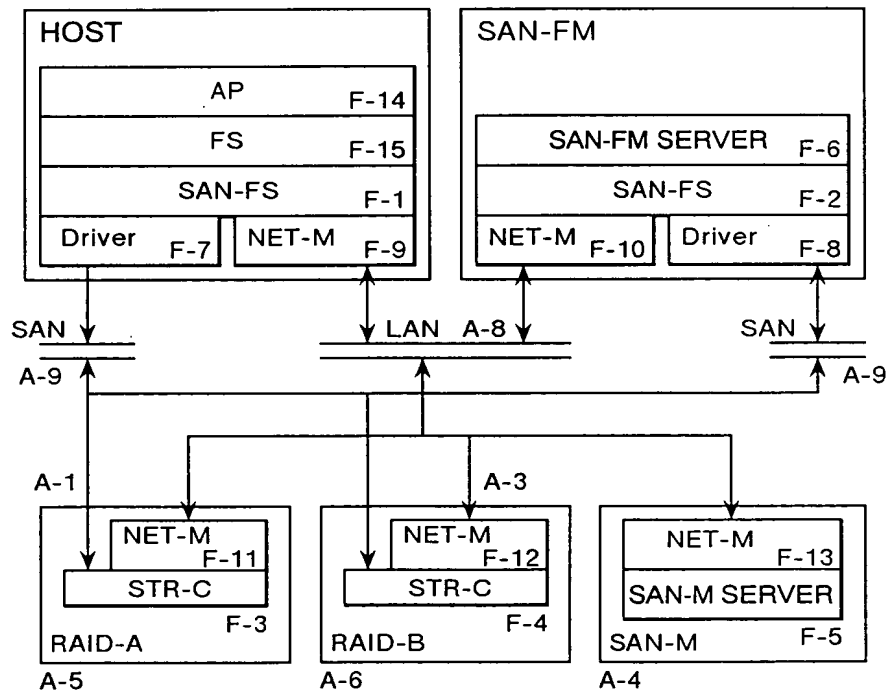
FIG. 7**FILE STORAGE MANAGEMENT SYSTEM**

FIG. 8

FILE CONVERSION FLOW

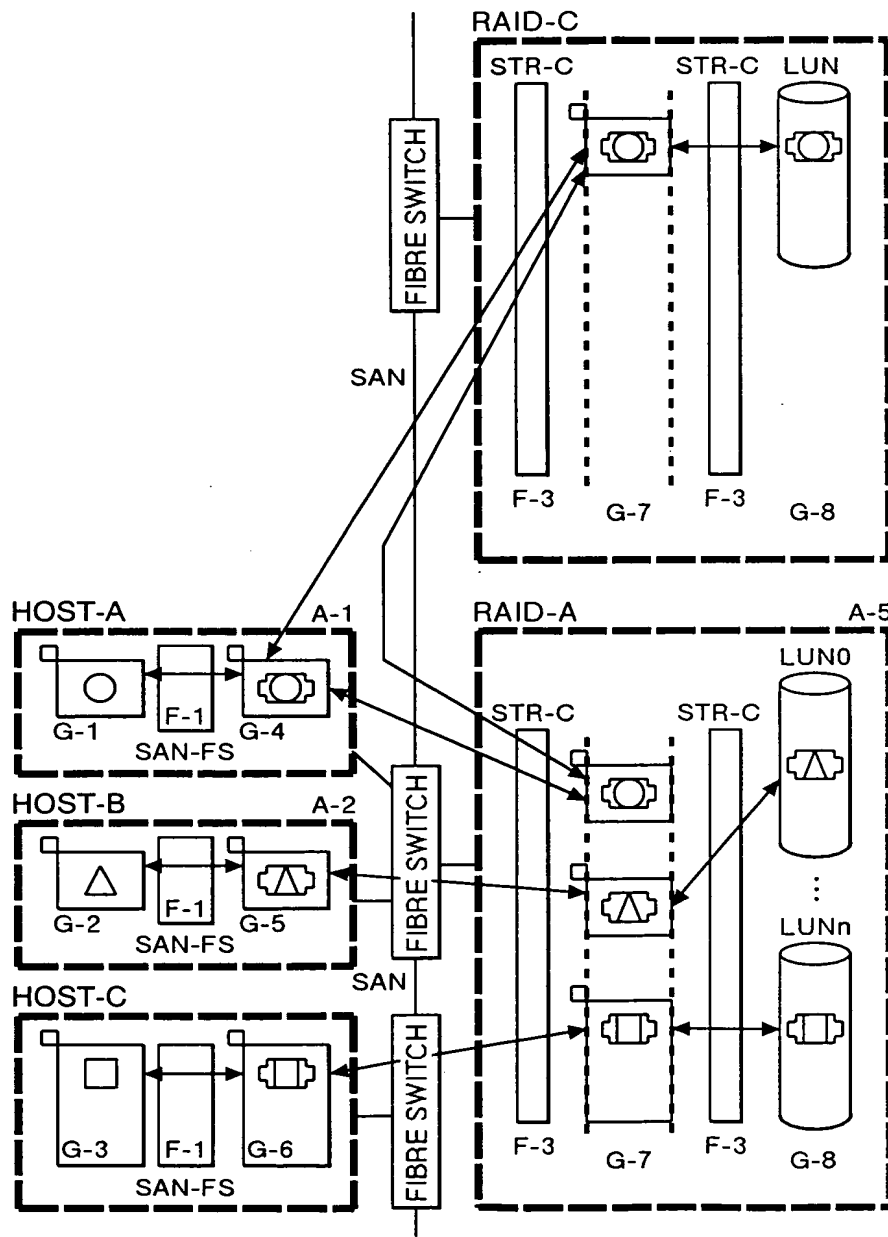


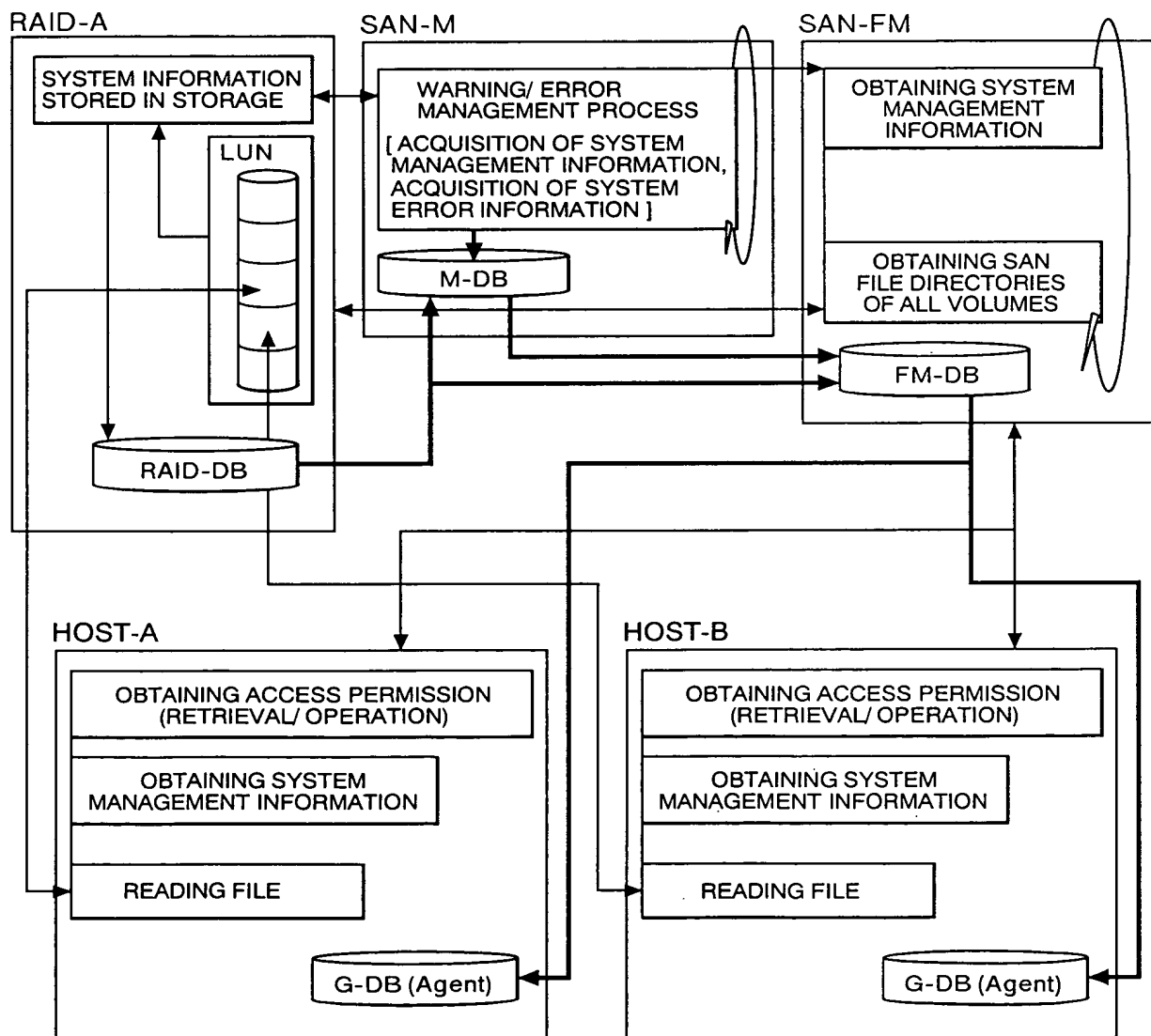
FIG. 9**DB CONFIGURATION FOR FILE STORAGE MANAGEMENT SYSTEM**

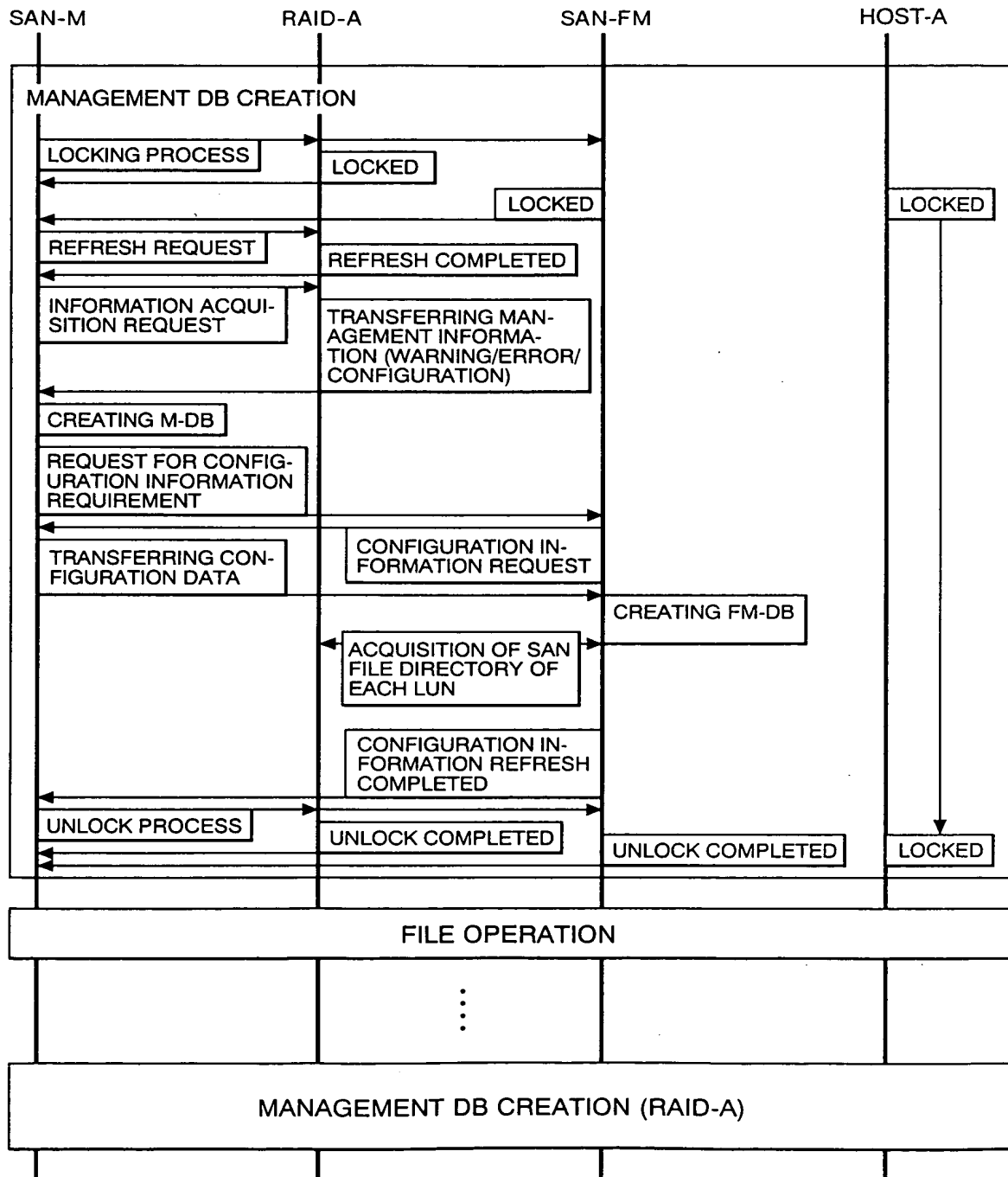
FIG. 10**DB CONFIGURATION FOR FILE STORAGE MANAGEMENT SYSTEM**

FIG. 11

FILE OPERATION IN FILE STORAGE MANAGEMENT SYSTEM

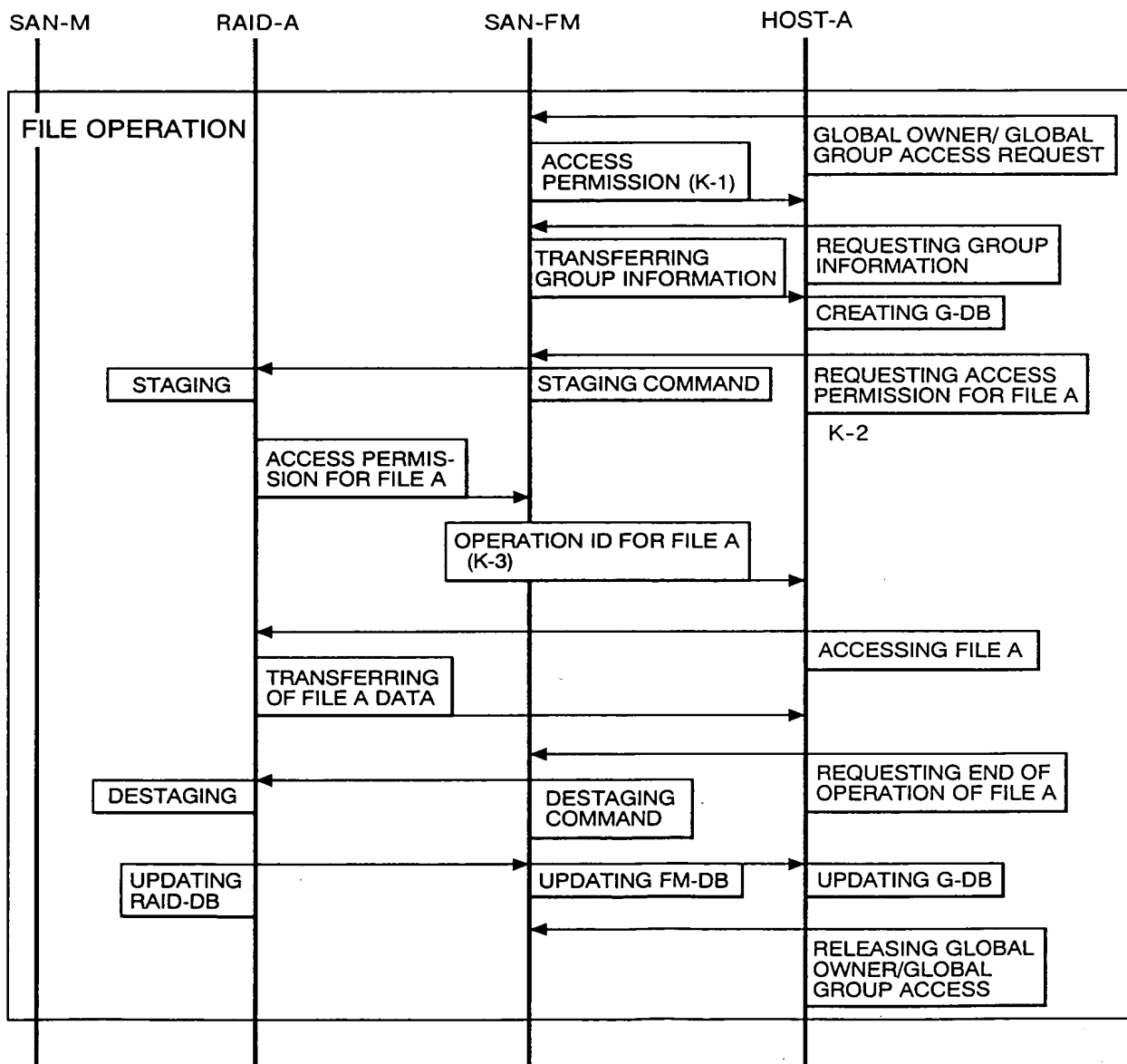


FIG. 12

FILE OPERATION OF FILE STORAGE MANAGEMENT SYSTEM

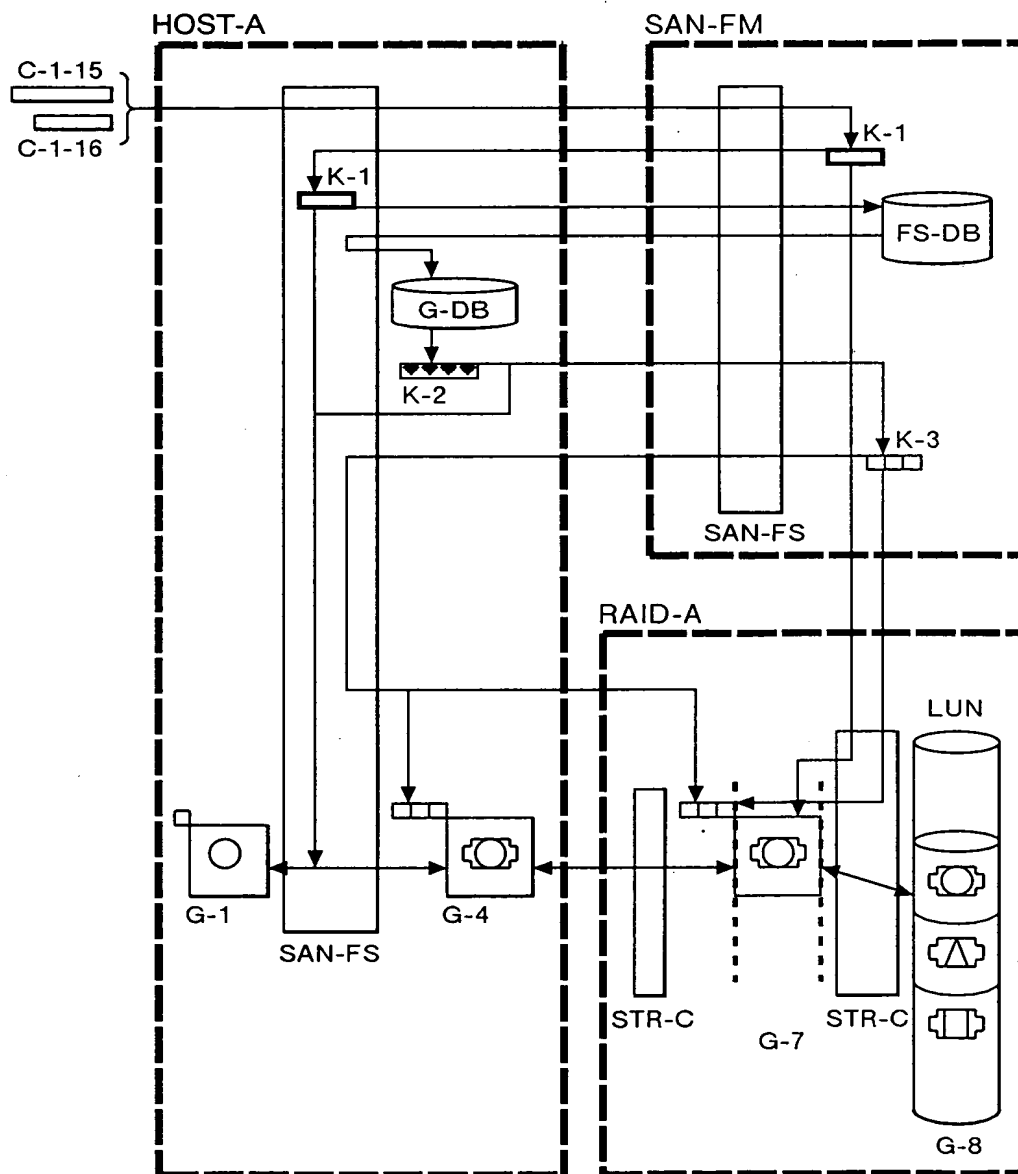


FIG. 13

**CAPACITY ERROR RECOVERY PROCESS
IN FILE STORAGE MANAGEMENT SYSTEM**

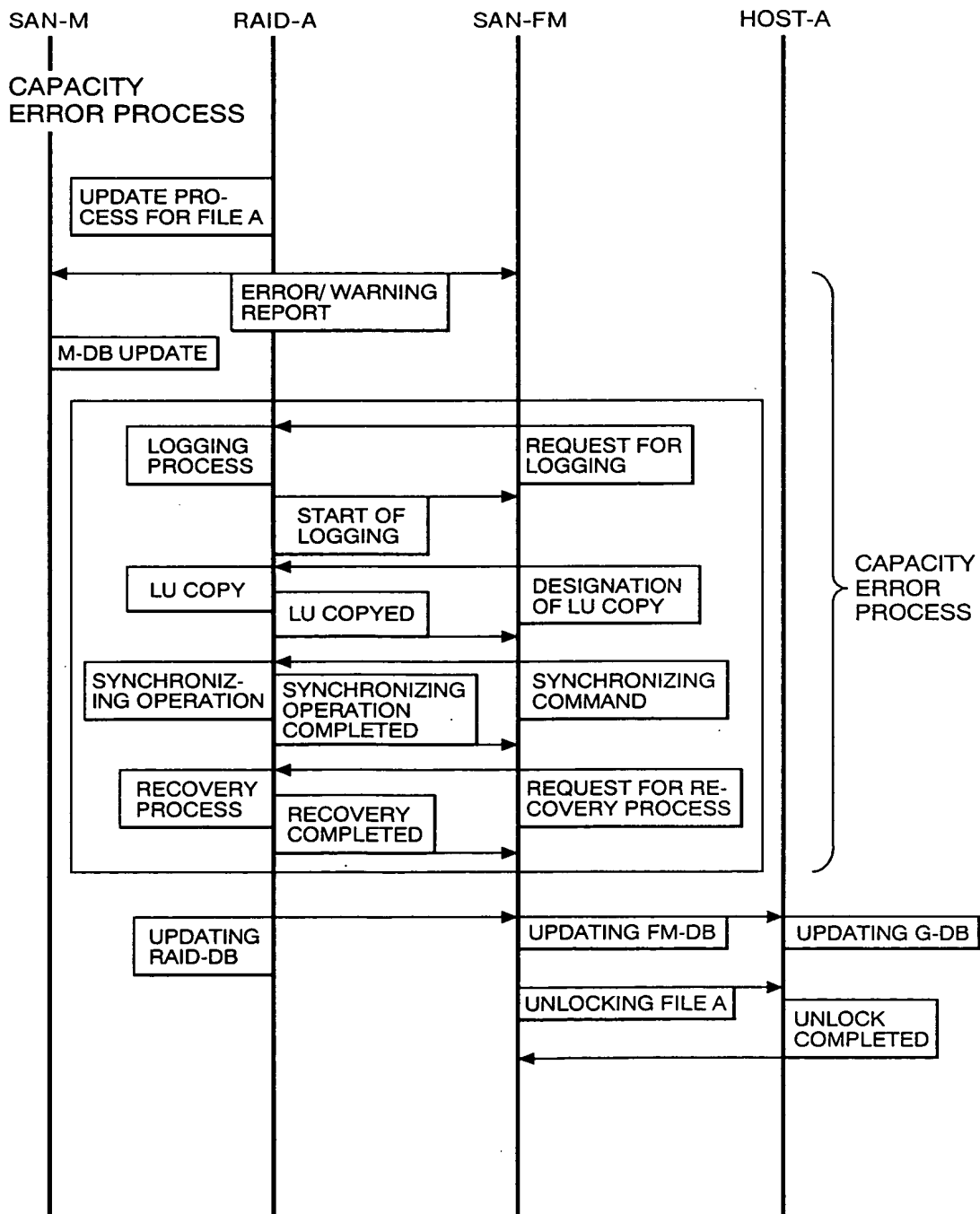


FIG. 14

CAPACITY ERROR RECOVERY PROCESS IN FILE STORAGE SYSTEM

